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MAY 9.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-six members present.

The following papers were presented for publication:—

"Fourth Contribution to the History of Existing Cetacea," by Edw. D. Cope.

"Zoological and Biological Methods of Research," by Harrison Allen, M.D.

Remarks on Fossils from the Ashley Phosphate Beds.—Prof. LEIDY observed that the so-called phosphate beds of Ashley River, South Carolina, were remarkable for the singular admixture of multitudes of fossils of different ages, from the early tertiary period inclusive down to the present epoch. The phosphatic nodules, for which the beds are explored, appear to have had their origin from the eocene rocks beneath. These have also contributed numerous remains of marine vertebrates especially of squalodonts, reptiles, and fishes. Mingled in the sand and clay with the phosphatic nodules and bones of eocene animals, are innumerable remains of cetaceans, sharks, and other marine animals of perhaps the middle and later tertiary ages. Added to these are multitudes of remains of both marine and terrestrial animals of the quaternary period. Pell-mell are found together bones of eocene squalodonts, animals related with the whales and seals; hosts of teeth of the great shark Carcharodon angustidens; myriads of the teeth of the giant of sharks of the tertiary period, the Carcharodon megalodon; bones and teeth of whales and porpoises; and abundance of remains of elephant, mastodon, megatherium, horse, etc.; and occasionally the rude implements of our more immediate ancestors.

From among a collection of fossils, from the Ashley phosphate beds, recently submitted to his inspection by Mr. J. M. Gliddon, of the Pacific Guano Company, the specimens were selected which lie upon the table. One of these is a well-preserved tooth of a Megatherium; another, a characteristic portion of the skull of a Manatee; a third, a complete tusk of the Walrus; indicating a still further point south for the extension of this animal than had been previously known; fourth, a huge tooth of a cetacean allied to the sperm whale, probably the same as those from the crag of Antwerp ascribed to Dinoziphius. Besides these there are the beaks of three cetaceans of the little known family of the Ziphioids. These are porpoise-like animals without teeth in the upper jaw, and usually with but a single pair of teeth in the lower jaw. The beaks composed of the co-ossified bones of the face are remarkable for their ivory-like density which probably rendered them available as weapons of defence.

A fourth beak from the same locality, presented by Mr. C. S. Bement, belongs to a different species of the same family. The beaks and some associated fossils will form the subjects of a paper shortly to be presented to the Academy.

The beaks have been referred to species with the following names and brief distinctive characters:—

CHONEZIPHIUS TRACHOPS.—Supra-vomerian canal open. Intermaxillaries co-ossified and forming a crest along the middle of the beak extending to the interval of the prenareal fossæ. Maxillaries with a rugged tract at the upper part of the base of the beak.

CHONEZIPHIUS LIOPS.—Beak proportionately of less length than in the preceding. Supra-vomerian canal and intermaxillaries the same, except that the crest of the latter in front is acute. Maxillaries without the rugged tract at base.

EBOROZIPHIUS COELOPS.—A new genus as well as species. Beak above forming a broad gutter as in Hyperoodon, and not divided by an intermaxillary crest as in the preceding. Maxillaries with prominent lateral crests at base, convex inwardly. Right prenareal fossa occupied by a thick osseous disk. Intermaxillaries co-ossified. Supra-vomerian canal open.

BELEMNOZIPHIUS PROROPS.—Beak solid, with all traces of the original separation of the constituent bones and the ossified mesethmoid cartilage obliterated.

Fish Remains of the Mesozoic Red Shales.—Prof. LEIDY remarked that the remains of life of any kind were exceedingly rare in the mesozoic red shales which cross our State about fifteen miles north of us. Hence any fossils whatever from these rocks were of interest. The three cycloid fish scales, and a few detached caudal rays, in the fragments of red shale, presented by him this evening, he found on the Perkiomen Railroad, near Yerkes' Station, Montgomery County. One of the scales resembles those described by the late Prof. E. Emmons, under the name of Rabdiolepis elegans, from the mesozoic coal shales of Chatham Co., N. C.

Botanical Correspondence of Zaccheus Collins.—Mr. REDFIELD called the attention of the members to the volume of letters of Zaccheus Collins which had been recently arranged and bound. Mr. Collins was well known in his day as an active philanthropist and as a zealous cultivator of natural science. He was early a member of the American Philosophical Society, was elected a member of the Philadelphia Linnæan Society, in 1809, before this Academy was founded, became a member of our Academy in March, 1815, and was one of its Vice-Presidents at the time of his death in 1831. He devoted himself especially to the sciences of Botany and Mineralogy, and the letters of the most eminent botanists of that time show how highly they valued his know-